

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (original): A hybrid polypeptide immunogen comprising a modified ORF0657n sequence segment at least about 100 amino acids in length, wherein said modified sequence segment comprises one or more alterations that increases sequence similarity to SEQ ID NO: 1.

Claim 2 (original): The hybrid polypeptide of claim 1, wherein said modified sequence segment comprises at least about 100 amino acids of a modified amino acid sequence selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, SEQ ID NO: 5, and SEQ ID NO: 6, provided that said modified amino acid sequence contains at least 8 amino acid alterations that increase sequence similarity to SEQ ID NO: 1.

Claim 3 (original): The hybrid polypeptide of claim 3, wherein said modified amino acid sequence is SEQ ID NO: 2 containing 8 to 100 amino acid alterations that increase sequence similarity to SEQ ID NO: 1.

Claim 4 (currently amended): The hybrid polypeptide of claim 2, wherein said modified amino acid sequence has the following sequence:

X1-AIKNPAI-X2- DK-X3-H-X4-APN-X5- RPIDFEMK-X6-X7-X8-G-X9-  
QQFYHYAS-X10-V-X11- PARVIFT-X12-X13-K-X14-IELGLQ-X15-X16-X17-  
X18-W-X19-KFEVYEGDKKLP-X20- KLVSXD-X21-X22-KDYAYIRFSVSNGT-  
X23-X24-VKIVSSTH-X25-X26-X27-N-X28-X29-EKYDYTLM-X30- FAQPIYN-X31-X32-  
DK-X33-X34-X35- EEDY-X36-X37-X38- KLLAPYKKAKTLERQVY EL-X39- K-X40- Q-  
X41-KLPEKLKA EYKKKL-X42-X43-T-X44- KAL-X45-X46-QVKS A-X47- TEFQNV-X48-  
PTN-X49-K-X50- TDLQ-X51-X52-X53-X54-VV-X55-ESVEN-X56-ES-X57-MDTFV-X58-  
HPIKT-X59-X60-LNGKKY-X61-VM-X62- TTND-X63-YWKDF-X64- VEG-X65- RVRT-  
X66- SKD-X67- KNN-X68- RT-X69- IFPY-X70- EGK-X71-X72-YDAIVKV-X73- VKTI-  
X74-Y-X75-GQYHVRI-X76- DK-X77-X78-X79 (SEQ ID NO: 58)

wherein

X1 is either E or a D alteration;

X2 is either K or an I alteration;  
X3 is either D or an E alteration;  
X4 is either S or a T alteration;  
X5 is either S or a W alteration;  
X6 is either K or an N alteration;  
X7 is either K or a D alteration;  
X8 is either D or a K alteration;  
X9 is either T or an E alteration;  
X10 is either S or a T alteration;  
X11 is either K or an E alteration;  
X12 is either D or a K alteration;  
X13 is either S or a T alteration;  
X14 is either E or an I alteration;  
X15 is either S or a T alteration;  
X16 is either G or an A alteration;  
X17 is either K or a S alteration;  
X18 is either F or a T alteration;  
X19 is either R or a K alteration;  
X20 is either I or a V alteration;  
X21 is either T or an S alteration;  
X22 is either V or a D alteration;  
X23 is either K or an R alteration;  
X24 is either A or an E alteration;  
X25 is either F or a Y alteration;  
X26 is either an optionally present G insertion alteration;  
X27 is either N or a E alteration;  
X28 is either K or a I alteration;  
X29 is either E or a H alteration;  
X30 is either E or a V alteration;  
X31 is either S or a N alteration;  
X32 is either A or a P alteration;  
X33 is either F or an Y alteration;  
X34 is either K or a V alteration;  
X35 is either T or a D alteration;  
X36 is either K or a N alteration;

X37 is either A or an L alteration;  
X38 is either E or a Q alteration;  
X39 is either N or an E alteration;  
X40 is either I or a L alteration;  
X41 is either D or an E alteration;  
X42 is either E or a D alteration;  
X43 is either D or a Q alteration;  
X44 is either K or an R alteration;  
X45 is either D or an A alteration;  
X46 is either E or a D alteration;  
X47 is either I or a V alteration;  
X48 is either Q or a T alteration;  
X49 is either E or a D alteration;  
X50 is either M or an L alteration;  
X51 is either D or an E alteration;  
X52 is either T or an A alteration;  
X53 is either K or H alteration;  
X54 is either Y or an F alteration;  
X55 is either Y or an F alteration;  
X56 is either N or a S alteration;  
X57 is either M or a V alteration;  
X58 is either K or an E alteration;  
X59 is either G or an A alteration;  
X60 is either M or a T alteration;  
X61 is either M or a V alteration;  
X62 is either E or a K alteration;  
X63 is either D or a S alteration;  
X64 is either M or an I alteration;  
X65 is either Q or a K alteration;  
X66 is either I or a V alteration;  
X67 is either A or a P alteration;  
X68 is either T or an S alteration;  
X69 is either I or a L alteration;  
X70 is either V or an I alteration;  
X71 is either T or an A alteration;

X72 is either L or a V alteration;

X73 is either H or a V alteration;

X74 is either D or a G alteration;

X75 is either D or an E alteration;

X76 is either V or an I alteration;

X77 is either E or a D alteration;

X78 is either A or an I alteration;

X79 is either F or a N alteration;

~~X1 is either E or a D alteration;~~

~~X2 is either K or an I alteration;~~

~~X3 is either D or an E alteration;~~

~~X4 is either S or a T alteration;~~

~~X5 is either S or a W alteration;~~

~~X6-X7-X8 is either KKD or NDK alterations;~~

~~X9 is either T or an E alteration;~~

~~X10 is either S or a T alteration;~~

~~X11 is either K or an E alteration;~~

~~X12 is either D or a K alteration;~~

~~X13 is either S or a T alteration;~~

~~X14 is either E or an I alteration;~~

~~X15 is either S or a T alteration;~~

~~X16 is either G or an A alteration;~~

~~X17-X18 is either KF or ST alterations;~~

~~X19 is either R or a K alteration;~~

~~X20 is either I or a V alteration;~~

~~X21 is either T or an S alteration;~~

~~X22 is either V or a D alteration;~~

~~X23 is either K or an R alteration;~~

~~X24 is either A or an E alteration;~~

~~X25 is either F or a Y alteration;~~

~~X26-X27 is either N or GE alterations;~~

~~X28-X29 is either KE or IH alterations;~~

~~X30 is either E or a V alteration;~~

~~X31-X32 is either SA or NP alterations;~~

~~X33~~ is either ~~F~~ or an ~~Y~~ alteration;  
~~X34~~ ~~X35~~ is either ~~KT~~ or ~~VD~~ alterations;  
~~X36~~ ~~X37~~ ~~X38~~ is either ~~KAE~~ or ~~NLQ~~ alterations;  
~~X39~~ is either ~~N~~ or an ~~E~~ alteration;  
~~X40~~ is either ~~I~~ or a ~~L~~ alteration;  
~~X41~~ is either ~~D~~ or an ~~E~~ alteration;  
~~X42~~ is either ~~E~~ or a ~~D~~ alteration;  
~~X43~~ is either ~~D~~ or a ~~Q~~ alteration;  
~~X44~~ is either ~~K~~ or an ~~R~~ alteration;  
~~X45~~ is either ~~D~~ or an ~~A~~ alteration;  
~~X46~~ is either ~~E~~ or a ~~D~~ alteration;  
~~X47~~ is either ~~I~~ or a ~~V~~ alteration;  
~~X48~~ is either ~~Q~~ or a ~~T~~ alteration;  
~~X49~~ is either ~~E~~ or a ~~D~~ alteration;  
~~X50~~ is either ~~M~~ or an ~~L~~ alteration;  
~~X51~~ is either ~~D~~ or an ~~E~~ alteration;  
~~X52~~ ~~X53~~ is either ~~TK~~ or ~~AH~~ alterations;  
~~X54~~ is either ~~Y~~ or an ~~F~~ alteration;  
~~X55~~ is either ~~Y~~ or an ~~F~~ alteration;  
~~X56~~ is either ~~N~~ or a ~~S~~ alteration;  
~~X57~~ is either ~~M~~ or a ~~V~~ alteration;  
~~X58~~ is either ~~K~~ or an ~~E~~ alteration;  
~~X59~~ is either ~~G~~ or an ~~A~~ alteration;  
~~X60~~ is either ~~M~~ or a ~~T~~ alteration;  
~~X61~~ is either ~~M~~ or a ~~V~~ alteration;  
~~X62~~ is either ~~E~~ or a ~~K~~ alteration;  
~~X63~~ is either ~~D~~ or a ~~S~~ alteration;  
~~X64~~ is either ~~M~~ or an ~~I~~ alteration;  
~~X65~~ is either ~~Q~~ or a ~~K~~ alteration;  
~~X66~~ is either ~~I~~ or a ~~V~~ alteration;  
~~X67~~ is either ~~A~~ or a ~~P~~ alteration;  
~~X68~~ is either ~~T~~ or an ~~S~~ alteration;  
~~X69~~ is either ~~I~~ or a ~~L~~ alteration;  
~~X70~~ is either ~~V~~ or an ~~I~~ alteration;  
~~X71~~ is either ~~T~~ or an ~~A~~ alteration;

~~X<sup>72</sup> is either L or a V alteration;~~  
~~X<sup>73</sup> is either H or a V alteration;~~  
~~X<sup>74</sup> is either D or a G alteration;~~  
~~X<sup>75</sup> is either D or an E alteration;~~  
~~X<sup>76</sup> is either V or an I alteration;~~  
~~X<sup>77</sup> is either E or a D alteration;~~  
~~X<sup>78</sup> is either A or an I alteration;~~  
~~X<sup>79</sup> is either F or a N alteration;~~

provided that at least 20 of said alterations are present.

Claim 5 (original): The hybrid polypeptide of claim 4, wherein said modified sequence segment comprises at least 200 amino acids of said modified amino acid sequence.

Claim 6 (previously presented): The hybrid polypeptide of claim 4, wherein said modified sequence segment comprises said modified amino acid sequence and at least 55 of said alterations are present.

Claim 7 (original): The hybrid polypeptide of claim 1, wherein said hybrid polypeptide consists of a sequence selected from the group consisting of SEQ ID NOs: 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, and 43.

Claim 8 (original): A method of making a hybrid polypeptide comprising the step of introducing one or more alterations into a ORF0657n sequence segment at least about 100 amino acids in length, wherein at least one of said alterations increases sequence similarity to SEQ ID NO: 1.

Claim 9 (original): An immunogen comprising the modified ORF0657n sequence of claim 1 and one or more additional regions or moieties covalently joined to said sequence at the carboxyl terminus or amino terminus, wherein each region or moiety is independently selected from a region or moiety having at least one of the following properties: enhances the immune response, facilitates purification, or facilitates polypeptide stability.

Claim 10 (previously presented): A composition able to induce a protective immune response in a patient comprising an immunologically effective amount of the immunogen of claim 1 and a pharmaceutically acceptable carrier.

Claim 11 (original): The composition of claim 10, wherein said composition further comprises an adjuvant.

Claim 12 (previously presented): A method of inducing a protective immune response in a patient comprising the step of administering to said patient an immunologically effective amount of the immunogen of claim 1.

Claim 13 (original): The method of claim 12, wherein said patient is a human.

Claim 14 (original): The method of claim 13, wherein said patient is being treated prophylactically against *S. aureus* infection.

Claim 15 (previously presented): A nucleic acid comprising a nucleotide sequence encoding the polypeptide of claim 1.

Claim 16 (original): The nucleic acid of claim 15, wherein said nucleic acid is an expression vector and said nucleotide sequence is part of a recombinant gene.

Claim 17 (original): A cell comprising the recombinant gene of claim 16, wherein said recombinant gene expresses said nucleic acid sequence in said cell to produce said polypeptide.

Claim 18 (original): A method for evaluating the efficacy of an immunogen to produce a protective immune response against *Staphylococcus* comprising the steps of:

(a) inoculating an animal model with said immunogen to produce an immunized animal model;

(b) challenging said immunized animal model with a *Staphylococcus* challenge at a potency that provides about 80 to 90% death in said animal model over a period of about 7 to 10 days starting on the first or second day, wherein said *Staphylococcus* challenge is produced from *Staphylococcus* grown to stationary phase, and said *Staphylococcus* challenge is intravenously introduced into said immunized animal model; and

(c) measuring the ability of said immunogen to provide protective immunity.

Claim 19 (original): The method of claim 18, wherein said *Staphylococcus* is *Staphylococcus aureus*.

Claim 20 (original): The method of claim 19, wherein said animal model is a rat or mouse.

Claims 21-23 (Canceled).